

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (original) A radiation-recording plate constructed and arranged to have a capacity to form an image upon exposure from a front side and to have a capacity to form an image upon exposure from a back side,

the plate including prior to exposure a marker that produces a mark detectable in the image after exposure and indicative of both which of the front side and the back side the plate is exposed from and indicative of any mirroring transformations performed upon an image recovered from the plate after exposure.

2. (original) The plate of claim 1, the marker comprising a medium opaque to the radiation covering a region that does not interfere with a region of interest of the image when the plate is exposed from either side.

3. (original) The plate of claim 2, sensitive to X-radiation, the medium comprising one of a heavy element, an alloy including a heavy element, a compound including a heavy element or a salt of a heavy element.

4. (original) The plate of claim 3, the heavy element being one of Pb, Sn, Bi, I and Ba.

5. (original) The plate of claim 2, sensitive to X-radiation, the medium suspended in a binder applied to the region.

6. (original) The plate of claim 1, the marker having asymmetry about at least one axis.

7. (original) The plate of claim 6, wherein the marker has horizontal asymmetry about a vertical axis relative to a normal image orientation.

8. (original) The plate of claim 6, wherein the marker has vertical asymmetry about a horizontal axis relative to a normal image orientation.
9. (original) The plate of claim 1, the marker further comprising a back side marker producing a mark in the image whose appearance in the image on the plate indicates exposure from the back side without interfering with a region of interest of the image.
10. (original) The plate of claim 9, wherein the marker is a rivet having a head and a foot, the head and the foot covering different areas.
11. (original) The plate of claim 9, wherein the marker comprises:
 - a front frame; and
 - a back frame;
 - the front frame and the back frame covering different areas.
12. (original) The plate of claim 9, wherein the marker comprises:
 - a front-side pattern always present in the image; and
 - a back-side pattern present in the image in combination with the front-side pattern after exposure from the back side.
13. (original) The plate of claim 9, wherein the marker comprises:
 - a corner element having a front and a back, the front and the back covering different areas not including a region of interest.
14. (original) The plate of claim 9, having a layer sensitive to the radiation that is readable only from the front side, the back side marker further comprising at least one of a material that enhances reading the sensitive layer and a material that attenuates reading of the sensitive layer.

15. (original) The plate of claim 9, wherein the back side marker further comprises at least one of a material that enhances exposure of the plate in a defined region and a material that attenuates exposure of the plate in the defined region.
16. (original) The plate of claim 15, wherein the back side marker further comprises one of a heavy element, an alloy including a heavy element, a compound including a heavy element or a salt of a heavy element.
17. (original) The plate of claim 16, the heavy element being one of Pb, Sn, Bi, I and Ba.
18. (original) The plate of claim 1, further comprising a front side marker producing a mark in the image whose appearance in the image on the plate indicates exposure from the front side.
19. (original) The plate of claim 18, having a layer sensitive to the radiation that is readable at least from the front side, the front side marker further comprising at least one of a void defined in the layer sensitive to the radiation, a material that enhances a signal returned in the area of the marker when reading the sensitive layer and a material that attenuates the signal returned in the area of the marker when reading the sensitive layer.
20. (original) The plate of claim 19, readable only from the front side by exciting the layer sensitive to the radiation with an excitation wavelength to generate a return signal at a return signal wavelength, the front side marker functionally opaque to at least one of the excitation signal wavelength and the return signal wavelength.
21. (original) The plate of claim 19, wherein the front side marker further comprises one of a heavy element, an alloy including a heavy element, a compound including a heavy element or a salt of a heavy element.
22. (original) The plate of claim 21, the heavy element being one of Pb, Sn, Bi, I and Ba.

23. (original) The plate of claim 19, wherein the front side marker further comprises a void defined in the layer sensitive to the radiation.
24. (original) The plate of claim 1, the marker having asymmetry about at least one axis and the marker further comprising a front side marker and a back side marker.
25. (original) The plate of claim 24, wherein the marker has horizontal asymmetry about a vertical axis relative to a normal image orientation.
26. (original) The plate of claim 25, wherein the front side marker further comprises:
a region defined to have a directional marker shape pointed in a first direction when viewed from the front side.
27. (original) The plate of claim 26, wherein the back side marker further comprises:
a region defined to have a directional marker shape pointed in a second direction different from the first direction when viewed from the front side.
28. (original) The plate of claim 27, wherein the back side marker is positioned so as to alter the appearance in the image of the front side marker when the plate is exposed from the back side and read from the front side.
29. (original) The plate of claim 24, wherein the marker has vertical asymmetry about a vertical axis relative to a normal image orientation.
30. (original) The plate of claim 29, wherein the front side marker further comprises:
a region defined to have a directional marker shape pointed in a first direction when viewed from the front side.
31. (original) The plate of claim 30, wherein the back side marker further comprises:

a region defined to have a directional marker shape pointed in a second direction different from the first direction when viewed from the front side.

32. (original) The plate of claim 31, wherein the back side marker is positioned so as to obscure the front side marker when the plate is exposed from the back side and read from the front side.

33. (original) The plate of claim 19, further comprising another sensitive layer, wherein the back side marker is disposed between the sensitive layer and the other sensitive layer, and the plate further comprising another front side marker relative to the other sensitive layer.

34. (original) A method of identifying a side from which a radiation-recording plate having a capacity to form an image upon exposure from a front side and having a capacity to form an image upon exposure from a back side has been exposed to radiation, comprising:

exposing the plate to the radiation;

obtaining an image produced by exposing the plate to the radiation; and

incorporating in the plate prior to exposure, in a position that substantially does not interfere with an image area of the plate, a marker producing a mark whose appearance in an image identifies both which side the plate is exposed from and which is indicative of any mirroring transformations performed upon an image recovered from the plate after exposure; and

observing the image for the identification of the side of the plate exposed and for the indication of any mirroring transformations.

35. (original) The method of claim 34, further comprising:

arranging the marker to produce the mark so as to indicate whether the plate was flipped or rotated prior to exposing; and

observing the image for the indication.

36. (original) The method of claim 35, further comprising:

observing the image using image processing software, the image processing software recognizing the mark and reorienting the image to have a clinically expected orientation.

37. (original) The method of claim 36, further comprising:
storing with the image an indication of whether the image has been flipped an odd number of times.
38. (original) The method of claim 36, further comprising:
substituting for the mark a replacement mark indicative of the software having processed the image;
storing the image with the replacement mark.
39. (original) The method of claim 38, wherein substituting further comprises:
arranging the replacement mark to be visible and asymmetric with respect to both axes whereby the replacement mark indicates an orientation of the image that is recognizable with respect to both axes.
40. (original) The method of claim 38, further comprising:
storing with the image an indication of whether the image has been reoriented by an odd number of times.
41. (original) A method of making a radiation sensitive plate having at least one radiation sensitive layer, comprising:
providing a film sensitive to the radiation on a first side of the radiation sensitive plate;
applying a suspension of a heavy metal in a binder to a region of a second side of the radiation sensitive layer;
providing a detectable marker on the first side; and wherein
the detectable marker and the suspension of a heavy metal applied combined are distinct and asymmetric.

42. (original) The plate of claim 1, configured for use as radiography plate having a substantially smooth surface capable of producing a diagnostically useful image when exposed from either one of two sides.
43. (original) The plate of claim 42, wherein the feature comprises:
a front side marker producing a mark always apparent in the image; and
a back side marker producing a mark apparent in the image when the plate is exposed from the back side.
44. (original) The plate of claim 43, wherein the mark produced by the back side marker at least partially overlaps the front side mark.
45. (original) The plate of claim 44, wherein the mark produced by the front side marker and the mark produced by the back side marker are each asymmetric about two substantially perpendicular axes.
46. (original) The plate of claim 45, included in a radiography system further comprising:
software defined by a computer executed sequence of instructions to:
store the image in an image file containing image data;
detect the mark in the image data;
arrange the image data for display in a selected arrangement relative to a diagnostically expected orientation; and
store with the image file, distinct from the image data, an indication of the selected arrangement of the image data.
47. (amended) An image ~~stored on an image~~ storage device; holding an image data structure comprising:
a recording medium;
a data structure defined by a record in the recording medium of an image produced by exposure of a radiation-sensitive medium to the radiation; and;

a mark embedded in the ~~record of the image~~, data structure, the mark produced during the exposure of the radiation-sensitive medium, and the mark both indicative of which side the radiation-sensitive medium was exposed from and indicative of any mirroring transformations performed upon the image in whose record the mark is embedded.

48. (amended) The image storage device of claim 47, wherein the mark further comprises:
an indication of laterality immune to confusion by flipping and rotating the image.

49. (original) The image storage device of claim 48, wherein the recording medium is the radiation-sensitive medium.

50. (amended) The image storage device of claim 48, wherein the record in the recording medium comprises:
a digital signal representing the image held by the recording medium.

51. (amended) The image storage device of claim 50, further comprising:
a record of current orientation of the image, independent of the digital signal representing the image.

52. (original) The image storage device of claim 48, wherein the indication of laterality further comprises:
a record apparent upon viewing the image identifying unambiguously a current orientation of the image.